

# GERVASIO & ASSOC., INC.

CONSULTING ENGINEERS

77 EAST THOMAS ROAD, SUITE 120

PHOENIX, ARIZONA 85012

(602) 285-1720 • (602) 285-1530 (FAX)

August 23, 2013

Mr. Jeff Gregorich, Superintendent  
HAYDEN-WINKLEMAN UNIFIED SCHOOL DISTRICT #41  
824 Thorn Avenue  
Winkelman, AZ 85192

RE: BUS MAINTENANCE BUILDING  
Winkelman, Arizona  
PROPOSAL FOR DESIGN OF REPAIRS, ADVERTISE,  
CONSTRUCTION CONTRACT ADMINISTRATION  
G&A Job No. 3017.1 S

Dear Mr. Gregorich:

We are providing the following proposal for the investigation and limited design of repairs for the existing deterioration of the masonry in the Bus Maintenance Building structure. Included in the proposal are preparation of the Engineer's estimate of the cost of construction, solicitation, bidding, contractor selection, award of contract, construction contract administration, and inspection of the repairs.

This proposal provides for the following scope of work:

## **A. Detailed Structural Field Investigation**

In this phase of the investigation, we will perform detailed, in-depth probing into the specific problem areas of the Bus Maintenance Building pilasters. This will determine the extent of the deterioration of the masonry and concrete, limits of reinforcing or structural steel corrosion, and sizes and details of members requiring repairs. From this information we will develop concepts for the repair of each individual problem area.

This phase of the work will be the most difficult and disruptive, but it is crucial to the success of this project during construction. Normally, this portion of the work requires a concrete repair contractor to chip off the existing deteriorated concrete or masonry for evaluation. This process has been used on the other structures that we have investigated and has provided valuable information on types of damages which could be anticipated during the construction process.

There are no accurate nondestructive testing (NDT) methods to "see" into the masonry and concrete to determine the extent of the cracking and corrosion. There is no way to accurately determine how the masonry and concrete was originally constructed as well. The original Construction Drawings will be used as a guide if they are available, but often variations are discovered between the drawings and the actual construction. Based on these issues, we have found through our experience with other projects, the most effective way to develop good repair concepts which are representative of the actual conditions which will be discovered during the repair process, is through very detailed field investigation. This requires chipping off existing masonry and concrete, studying the drawings, exposing structural elements, and careful evaluation of the existing conditions. If inadequate field investigation is done, excessive changes could be experienced during the construction process, thereby increasing construction costs dramatically.

This phase of the investigation will be the most disruptive to the building occupants and building operations. Chipping of the concrete will be noisy and may disrupt vehicular as well as pedestrian traffic. Parking spaces will have to be vacated for us to perform the work. It will require careful coordination to minimize this disruption.

This fee proposal includes this Detailed Field Investigation, but does not include contractor costs to assist our investigation, as required.

**B. Shoring (if required)**

Based on the results of our field investigation, we may find that portions of the structure have deteriorated severely and the structural integrity of the system has been compromised. If this is the case, we may recommend shoring to support the structure until repairs are completed. Shoring can be complex and may involve significant blockage of parking spaces and disruption of the building functions. Therefore, significant coordination with the facility personnel will be required to minimize this impact. After the investigation is complete, we will advise you if shoring is required or if analysis to determine shoring requirements is needed.

This fee proposal does not include shoring design.

**C. Design of Structural Repairs**

We have been asked to include in this proposal the design of repairs for specific known problems. Therefore, the structural design of repairs includes the following:

- Replacement of four masonry pilasters that have cracked due to corrosion of reinforcing steel.
- Design of flashing to cover the tops of the replacement pilasters.

The design of repairs will include the development of plans and repair details and construction specifications for these items.

**D. Engineer's Estimate of Cost of Construction**

We will prepare an estimate of the Contractor's cost of construction to assist you in your budgeting tasks. For planning purposes, we estimate the Contractor's cost for this project to be \$30,000 to \$50,000.

**E. Bidding, Contractor Selection, and Award of Contract**

We will issue final Contract Construction Documents (repair drawings, specifications, and bid documents) for solicitation to qualified repair contractors to obtain construction bids on the repair work.

We will collect and review the bids from the repair contractors and recommend award of the contract to the selected contractor.

**F. Inspection of Repairs**

We will inspect the repairs during the construction process to verify the contractor's conformance with the design drawings and design intent. The inspection process is critical to the success of any concrete and roofing repair project. Many interpretations need to be made in the field about the repairs which neither the contractor nor City Inspectors are qualified to make. Because of the unique, complex nature of concrete repairs, most cities require "Special Structural Inspection" in accordance with the Building Code, requiring the engineers to perform this inspection.

**G. Construction Contract Administration**

We will manage the other aspects of the construction phase of the work that fall into the category of Construction Contract Administration (CCA). This includes general contract administration, including preconstruction meeting, processing payment applications, final inspection and punchlist, Certificate of Substantial Completion, and contract close-out.

**We propose the following fees for the Bus Maintenance Building Repair Project:**

Paragraph A: Detailed Field Investigation: \$1,200.00  
Paragraph C: Design and Construction Documents for the Structural Repairs: \$3,600.00  
Paragraph D: Engineer's Estimate of Cost of Construction: \$520.00  
Paragraph E: Solicitation, Contractor Selection, and Award of Contract: \$4,500.00  
Paragraph F: Inspections of Structural Repairs: \$2,400.00 (estimate based on 2 trips)  
Paragraph G: Construction Contract Administration: \$3,500.00

For your reference and review, we provided a list of concrete repair projects we have recently completed. As you will see in reviewing this list, we have extensive experience in concrete repairs. This experience benefits you in a better, more cost-effective repair design.

If this proposal is accepted, our standard contract will be issued.

We appreciate the opportunity to provide this service and welcome any questions. Please do not hesitate to call.

Sincerely,

GERVASIO & ASSOC., INC.



Marlene Betani, P.E.  
Forensic Structural Engineer

MB:blm

Enclosure

cc: Mr. Gerry Breuer - State of Arizona School Facilities Board (via e-mail: [gbreuer@azsfb.gov](mailto:gbreuer@azsfb.gov))

# GERVASIO & ASSOC., INC.

CONSULTING ENGINEERS

77 EAST THOMAS ROAD, SUITE 120

PHOENIX, ARIZONA 85012

(602) 285-1720 • (602) 285-1530 (FAX)

## CONCRETE REPAIR WORK

<u>PROJECT NAME</u>	<u>LOCATION</u>	<u>CLIENT</u>	<u>APPROX. DATE OF WORK</u>
Vaughn St. Warehouse	Phoenix, Arizona	Cushman Wakefield	2013
Phoenix Metro Tech High School	Phoenix, Arizona	Phoenix Union High School Dist.	2013
Hensley Warehouse	Phoenix, Arizona	Renaissance Construction	2012
Regency House Parking Garage	Phoenix, Arizona	Regency House HOA	2006-12
Chase Field	Phoenix, Arizona	Caliente Construction	2011-12
Sky Harbor Term. #3 Pkg. Garage	Phoenix, Arizona	Sun Eagle Corporation	2011-12
Horse Mesa Dam	Salt River Canyon, AZ	Salt River Project	2011
Mormon Flat Dam	Salt River Canyon, AZ	Salt River Project	2011
Cantex - Kingman	Kingman, Arizona	Squire, Sanders & Dempsey	2010
Highland & 24th St. Pkg. Garage	Phoenix, Arizona	Cushman & Wakefield of AZ	2009
NAU Parking Structure	Flagstaff, Arizona	Northern Arizona University	2009
Rich Ford	Albuquerque, NM	Rich Ford	2009
Esplanade Parking Garage	Phoenix, Arizona	ING Real Estate	2007-09
Palo Verde Nuclear Gen. Station	Tonopah, Arizona	Arizona Public Service	2008
ASU Memorial Union	Tempe, Arizona	Arizona State University	2008
City of Glendale Municipal Bldg. Parking Garage	Glendale, Arizona	City of Glendale	2008
FMC at Rio Ranch	Rio Rancho, NM	FMC	2008
City of Glendale Municipal Bldg. Cooling Tower	Glendale, Arizona	City of Glendale	2008
Ariz. Veterans Memorial Coliseum	Phoenix, Arizona	State of AZ, Dept. of Admin.	2007-08
Show Low Motorsports	Show Low, Arizona	Redondo Holding, Inc.	2008
Sun Devil Stadium	Tempe, Arizona	Arizona State University	2005-07
O'Reilly Chevrolet Dealership Parking Garage	Tucson, Arizona	O'Reilly Chevrolet	2007
Mitek Manufacturing	Phoenix, Arizona	Amir Development Co.	2007
Xpedex	Phoenix, Arizona	Amir Development Co.	2007
Northland Preparatory Academy	Flagstaff, Arizona	Northland Preparatory Academy	2007
Parkwood Medical Bldg.	Phoenix, Arizona	WJ Commercial Ent.	2006
Arizona Center APS Parking Garage	Phoenix, Arizona	FM Solutions	2005
Mtn. View Dorm Pkg. Garage	Flagstaff, Arizona	St. of Ariz. Risk Management	2005
AZ Supreme Court Pkg. Str.	Phoenix, Arizona	Johnston Engineering	2005
Biltmore Courts Pkg. Garage	Phoenix, Arizona	Travelers Insurance	2005
Creative Air Hangar	Scottsdale, Arizona	Snell & Wilmer	2005
South Bay Circuits	Chandler, Arizona	Snell & Wilmer	2005
Phoenix 24th Place Pkg. Garage	Phoenix, Arizona	Camidor Property Services	2004
AZ Supreme Court Cooling Tower	Phoenix, Arizona	Johnston Engineering	2004
Georgia Sq. Condo Pkg. Garage	Phoenix, Arizona	Georgia Square HOA	2004
USPS - Dist. Ctr. - 47th Ave.	Phoenix, Arizona	USAA Real Estate Company	2004
Eagle-Picher	Grove, Oklahoma	Eagle-Picher/Horizon	2004
U.S. Border Patrol Veh. Maint. Fac.	Douglas, Arizona	Brycon Construction	2004
Uptown Plaza	Phoenix, Arizona	Uptown Plaza Assoc.	2002-04
Kachina Elementary School	Glendale, Arizona	Peoria Unified School Dist.	2004